

REMARKS

Claims 21-34 are pending in this response. Claims were amended in this response. No new matter was introduced as a result of the amendments. Entry of the Amendments and favorable reconsideration is earnestly requested.

The declaration was objected to , as Dr. Harald Kosch “only” signed the left hand side of the document. Applicant submits that the inventor’s signature, along with other required information per 37 C.F.R. §1.67(a) properly appears on the document, and that a new declaration is not required. Applicant earnestly requests entry of the declaration, and alternately invites the Examiner to contact the undersigned is any remaining issues remain in this regard.

The specification was objected to for minor informalities. In light of the present amendments, Applicant submits the objectionable matter has been withdrawn. Regarding the splitting of the Background section, Applicant respectfully submits that the present form of the Background is proper, and that no further amendments are required. Withdrawal of the objection is earnestly requested.

Claim 21 and claims 22-34 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Regarding claim 21, applicant submits the amendments address the allegedly indefinite language. Support for the amendment may be found, for example, in paragraphs [0033-34] of the present specification. Regarding the term “Xpath” being a registered trademark, Applicant submits that the term is not being used in conjunction with its trade meaning, but instead refers to the XML Path Language, also known as XPath (see specification, [003-4]. XPath is well-known in the art as referring to an expression language for addressing portions of an XML document, or for computing values (strings, numbers, or boolean values) based on the content of an XML document. Indeed, the Chan reference, cited in the Office Action, uses this same terminology, and it appears that the scope of the meaning is clear to the Examiner, based on the content of the §102 rejection. Withdrawal of the rejection is earnestly requested.

Claims 21-34 were rejected under 35 U.S.C. §101 as allegedly being directed to non-statutory subject matter. Applicant submits this rejection is improper, as the claims are indeed directed to *generating* a bit stream. In other words, the claims describe a process for generating

the bitstream, and are not directed to the bit stream itself. Applicant submits that this rejection is not supported by U.S. caselaw, and therefore requests withdrawal.

Claims 21, 24-26, 28, 29, 31 and 32 were rejected under 35 U.S.C. §102(e) as being anticipated by Chan (US Pub. 2004/0010752).

Claims 22 and 23 were rejected under 35 U.S.C. §103(a) as being unpatentable over Chan (US Pub. 2004/0010752) in view of Johnson (US Patent 5,557,786).

Claim 27 was rejected under 35 U.S.C. §103(a) as being unpatentable over Chan (US Pub. 2004/0010752) in view of Mah et al. (US Patent 7,202,643).

Claim 30 was rejected under 35 U.S.C. §103(a) as being unpatentable over Chan (US Pub. 2004/0010752) in view of Fisher et al. (US Pub 2004/0032422).

Claims 33 and 34 were rejected under 35 U.S.C. §103(a) as being unpatentable over Chan (US Pub. 2004/0010752) in view of Walker et al. (US Pub 2003/0028557). Applicant respectfully traverses these rejections.

The prior art, alone or in combination, fails to teach or suggest the features of “inserting index data of the index nodes into the bit stream, whereby, following insertion of the index data of the parent node, the index data of the child node follows a first node after the parent node in the indexing tree on account of the sorting is inserted without information indicating at which position the index data of said child node is located in the bit stream; and inserting information into the bit stream in each case for a child node which does not follow first after the parent node, said information indicating at which position in the bit stream the index data of said child node is located” as recited in claim 21.

Applicant submits that Chan is directed towards an entirely different problem, and thus teaches entirely different features as compared to the present claims. The present claims are directed to generating a bit stream from an indexing tree (see [0001]). In contrast, Chan focuses on *filtering* XML documents based on tree patterns [0006]. Specifically, the claimed configuration generates a bit stream that allows more efficient queries and searches for index data (for additional support, see [0009]), wherein Chan uses an existing XML document *without any modifications* and provides a method to filter this XML-document. As a result, Chan addresses completely different objects in data management.

Specifically, Chan discloses that information from an XML document can be filtered with XPath expressions, using an index structure called "XTrie." As disclosed in paragraphs [0072-0075], XTrie is a rooted tree constructed from the set of distinct substrings S. An example of such an XTrie is disclosed in Fig. 3. In addition it is stated in [0075] that the number within each Trie node represents the node's identifier. This means that the XTrie shows the dependencies of the set of the XPath expressions (XPEs) in a hierarchical form, as is shown in Fig. 3. Since there is only the hierarchical dependencies, Chan does not distinguish between which of two child nodes follows first and second from the parent node, as presently claimed. Additionally, the present claims generate a bit stream from an indexing tree, which is not disclosed in Chan.

Paradoxically, the Office Action states that "an XPath Expression (XPE)" is a bit stream and "building an XPE tree" is "generating a bit stream" (pages 4-5). In addition, the Office Action claims that "an XPE-tree" in an indexing tree" (see page 5, 2nd paragraph). Under this interpretation, the bit stream and the indexing tree would *both* be represented by the XPE-Tree. However, this interpretation is clearly incorrect.

The XPEs in Chan are structural patterns that can be matched to nodes in the XML data tree ([0031]). As the XPEs only use structural patterns by using symbols (a, b, ...) it is clear that this structural pattern does not reflect a bit stream.

The Office Action also states that "nodes in the XPE tree of p" are "index nodes containing index data as claimed" ([0044, lines 9-12]). However, this passage only states that "path of nodes in the XPE-tree of p [d]efines substring s". It is unclear to the Applicant how index data may be found in p, since p defines a path by substrings and nothing else. Applicant points out that the present claims recite that the index nodes are sorted in the index tree by the index data according to one or more predetermined criteria. As there is no index data mentioned in Chan there is also teaching or suggestion to sort the index nodes by the index data according to one or more predetermined criteria. Even assuming that the index number within each tree node is capable of being interpreted as "index data" (see circled numbers of the XTrie in Fig 3; see [0075]), there is no teaching that the nodes of the XTrie are sorted by the index numbers according to a predetermined criteria.

The Office Action further states (page 6) that "p . . . is the index data of the index nodes". However, this does not coincide with the Office Action's earlier interpretation that "an XPath Expression (XPE) is a bit stream." Under the Office Action's logic, the XPath Expression $XPE = p$ seems to represent *both the bit stream and the index data of the index nodes of p*. However the "/a" or "/b" values in p represent the nodes of the XTree (see [0032]: "which specify a node name and the hierarchical relationship between the node".) The only reasonable interpretation from this is that the $XPE = p$ in Chan contains nodes of a path - the notion that p reflects the index data of the index nodes is not found anywhere in the disclosure of Chan.

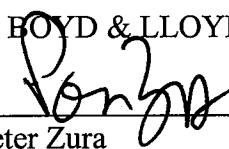
Going further, the bold text in third paragraph on page 6 of the Office Action does not reflect the text of the present claim 21. Applicants submits that there is a differentiation between the "first node" that follows first the parent node in the index tree, and "other nodes". For the first node, no information indicating the position of the index data in the bit stream is included in the bit stream, wherein for other (but not the first node) such information is included to the bit stream. Chan is wholly silent in this regard; Chan does not make any specific differentiation which node follows a first and another (not first) from a parent node - the ordering in Chan's XTree only reflects the hierarchy with no ordering of children of one parent node within one hierarchy (see FIG. 3, and [0075] - there is no order required in the hierarchy level covering a, b, c and d). None of the other cited references solve the deficiencies of Chan, discussed above.

For at least these reasons, Applicant submits the rejection is improper and should be withdrawn. In light of the above, Applicant respectfully submits that claims 21-34 are allowable over the prior art. Applicant also requests that a timely Notice of Allowance be issued in this case. Should there be any other charges regarding this application, the Examiner is hereby authorized to charge Deposit Account 02-1818 for any insufficiency of payment.

Respectfully submitted,

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